

Notes on Tiliaceae in Australia, 2. A revision of the simple-haired species of the genus *Corchorus* L.

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Summary

Halford, D.A. (1995). Notes on Tiliaceae in Australia, 2. A revision of the simple-haired species of the genus *Corchorus* L. *Austrobaileya* 4(3): 297–320. The simple-haired species of the genus *Corchorus* are revised for Australia. A generic description of *Corchorus* is given based on Australian material. Thirteen species are recognised, *C. aestuans* L., *C. capsularis* L., *C. cunninghamii* F. Muell., *C. fascicularis* Lam., *C. hygrophilus* Benth., *C. macropetalus* (F. Muell.) Domin, *C. macropterus* G.J. Leach & Cheek, *C. olitorius* L., *C. pascuorum* Domin, *C. reynoldsiae* Halford, *C. thozetii* Halford, *C. tridens* L. and *C. trilocularis* L. Distributional maps and illustrations are provided for all 13 species. Lectotypes are selected for *C. cunninghamii* F. Muell., *C. pascuorum* Domin, *C. tridens* L. and *Triumfetta macropetalus* F. Muell.

Keywords: *Corchorus* - simple-haired - Australia; *Corchorus cunninghamii*, *Corchorus macropetalus*, *Corchorus pascuorum*, *Corchorus reynoldsiae*, *Corchorus thozetii*, *Corchorus tridens*.

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Introduction

This paper is the second in a series examining the family Tiliaceae in Australia and is concerned with the genus *Corchorus* L. Halford (1993) presented a key to the genera of Tiliaceae in Australia. *Corchorus* is distinguished from the other genera in the family in Australia by having free sepals which do not have an appendage on the abaxial surface, petals without a prominent gland near base, capsular fruit which lack spines or bristles and two to many ovules per loculus.

Corchorus was originally described by Linnaeus (1753) and included four species (*C. siliquosus*, *C. olitorius*, *C. capsularis* and *C. hirsutus*). Since that date many additional species have been described by various authors. Estimates of the number of species in the genus vary from approximately 40 (Mabberley 1989) to 100 (Wild 1984). The species are widely distributed in the tropical and warm temperate regions of the world, with most of the diversity centered in Africa and Australia. Two of the species (*C. capsularis* and *C. olitorius*) are grown in India and Bangladesh, and to a minor extent elsewhere for the commercial jute fibre.

The first Australian conspectus of *Corchorus* was made by Hooker (1859) when he listed four species (*C. olitorius*, *C. fascicularis*, *C. tridens* and *C. acutangulus* (= *C. aestuans*)) as occurring there. Mueller (1862) described five new endemic species from northern Australia. The following year Bentham (1863) published the first volume of *Flora Australiensis* where he recognised 13 species of which nine were considered endemic. There, he described four new species and two new varieties. In the following 50 years several other species were described from Australia (Mueller 1872, 1887, 1892, Tate 1898). The most extensive treatment of *Corchorus* in Australia to the present is that of Domin (1927, 1928) in which he listed 17 species, including three new species, five new varieties and two of Bentham's varieties which were raised to species rank. More recently, Cheek and Leach (1992) described a new species from the Northern Territory and Rye (1993) described a new species from the Pilbara region of Western Australia. A number of regional flora treatments have examined parts of the genus in Australia (Mitchell 1981, Stanley and Ross 1986, Rye 1992).

The genus *Nettoa* was described by Baillon (1866) and consisted of a single species *N. crozophorifolia*, based on material collected from north west Western Australia by one of the botanists on Baudin's 1800–1804 expedition. Burret (1934) did not accept this as a separate genus and transferred the species to *Corchorus*. Burret also described another species (*C. pachyphyllus*) from north-western Australia. Ewart and Petrie (1926) described the genus *Scorpia* to include a single species, *S. simplicifolia*, and placed it in the family Leguminosae. *S. simplicifolia* is conspecific with the earlier named *Corchorus vermicularis* F. Muell., so *Scorpia* is here synonymised with *Corchorus*.

The subgeneric classifications of the genus by De Candolle (1824) and Endlicher (1840) were found to have several shortcomings when applied to the species recognised in this work so no attempt has been made to develop an updated subgeneric classification here. However, for practical reasons, the genus has been divided here into two informal groups, one for species with stellate hairs present on the stem and leaves and one for those with only simple hairs present on the stem and leaves. In this paper, I intend to cover the species of *Corchorus* with only simple hairs on their stems and leaves. This group includes thirteen species, two of which are new. The more numerous stellate-haired species will be covered in a forthcoming paper.

The present study involved examination of herbarium specimens together with field work in Queensland, Northern Territory and Kimberley Region of Western Australia. Flowering and fruiting times are based solely on information from herbarium specimens. Unless otherwise stated, the species dealt with in this paper are not considered to be rare or endangered. The conservation codings for the rare and threatened species follow Briggs and Leigh (1988) or Thomas and McDonald (1989).

Taxonomy

Corchorus L., Sp. Pl. 529 (1753); Gen. Pl. 5th edn, 234 (1754). **Type:** *C. olerius* L. (lecto).

Nettoa Baill., Adansonia 6: 238–242 t. 7 (1866). **Type:** *Nettoa crozophorifolia* Baill.

Scorpia Ewart & A.H.K. Petrie, Proc. Roy. Soc. Victoria 38: 169 fig. 2 (1926), **synon. nov.** **Type:** *Scorpia simplicifolia* Ewart & A.H.K. Petrie (= *Corchorus vermicularis* F. Muell.).

Derivation of Name: named from the Greek, *korkhoros*, an ancient name of uncertain origin for some herbaceous pot plant, perhaps *C. olerius*.

Annual or perennial shrubs, subshrubs or herbs, with simple, stellate or stellate-dendritic hairs. Leaves alternate or spirally arranged, simple, serrate to dentate, occasionally with the basal teeth prolonged into long setaceous points. Stipules small, sometimes turgid proximally, caducous. Inflorescences lateral or leaf-opposed, bracteate, shortly pedunculate, of 1-to several-flowered umbellate or racemose cymes. Flowers bisexual. Sepals 4 or 5, free, sometimes cucullate distally, often apiculate or caudate at apex. Petals 4 or 5, yellow, usually shortly unguiculate. Androgynophore usually present, with an inconspicuous glandular patch at the base of each petal, and apex produced into a fleshy, annular to cup-like disc, glabrous or rarely densely hairy. Stamens 4 to many, free; filaments terete, glabrous; anthers dorsifixed. Ovary 2-to 10-locular; ovules 2 to many per loculus; style terete, glabrous; stigma minutely lobed or toothed, fimbriate. Fruit a loculicidal or septicidal capsule, 2-to 10-valved, cylindrical to subglobose, glabrous or hairy, straight, curved or twisted, smooth or verrucose, with valves sometimes with transverse septa adaxially; seeds several per loculus.

Key to the simple-haired species of *Corchorus* in Australia

1. Sepals 4 2
 Sepals 5 5

2. Capsule obovoid to broadly obovoid or broadly ellipsoid, 7–25 mm long, 7–10 mm diameter, with apex truncate to rounded 3
 Capsule narrowly ellipsoidal, 10–35 mm long, 3–6 mm wide, with apex obtuse, acute or somewhat rostrate 4
3. Sepals 7–9 mm long; fruit erect or reflexed when mature, rugose. QLD 10. *C. hygrophilus*
 Sepals 10–12 mm long; fruit ascending to erect, verrucose. QLD 11. *C. reynoldsiae*
4. Sepals 6–7 mm long; fruit narrowly trigonous-ellipsoid or rarely tetragonous-ellipsoid, 10–17 mm long, 3–5 mm diameter, with 3 or 4 narrow longitudinal ribs. QLD 8. *C. thozetii*
 Sepals 7–11 mm long; fruit narrowly ellipsoid, 15–35 mm long, 4–6 mm diameter, without ribs. QLD, NSW 7. *C. cunninghamii*
5. Fruit with 4 to 8 prominent longitudinal wings 6
 Fruit either smooth, verrucose, rugose or ribbed, without prominent longitudinal wings 7
6. Fruit with 3 or 4 bifid horns at apex; sepals < 5 mm long; stamens < 30. WA, NT, QLD 3. *C. aestuans*
 Fruit with a black obtuse mucro at apex; sepals > 6 mm long; stamens > 30. NT 9. *C. macropterus*
7. Fruit depressed globose to ovoid-globose or obloid-cylindrical, > 7 mm diameter 8
 Fruit cylindrical, < 6 mm diameter 10
8. Sepals < 5 mm long; stamens < 30; fruit depressed globose, 10-valved. WA, NT 1. *C. capsularis*
 Sepals > 6 mm long; stamens > 50; fruit ovoid-globose or obloid-cylindrical, 3-to 9-valved 9
9. Fruit ovoid-globose, 3-to 5-valved, covered with fleshy appendages 2.0–4.0 mm long, each terminated by a single setaceous hair. WA, NT 12. *C. macropetalus*
 Fruit obloid-cylindrical, 6-to 9-valved, verrucose. NT, QLD 13. *C. pascuorum*
10. Stems erect; plants up to 2 m high; fruit 3–6 mm diameter, 5-or 6-valved. WA, NT, QLD, NSW 2. *C. olitorius*
 Stems procumbent; plants up to 60 cm high; fruit 1.5–3 mm diameter, 3-valved 11
11. Valves with transverse septa between seeds; stamens mostly 20 to 30; sepals 4.0–6.0 mm long. WA, NT, QLD 4. *C. trilocularis*
 Valves without conspicuous septa between seeds; stamens < 15; sepals 1.0–3.5 mm long 12
12. Fruit 25–35 mm long, glabrous or with scattered scabrous hairs, with 3 spreading bifid horns at apex; stamens 9–11. NT, QLD 5. *C. tridens*
 Fruit 10–20 mm long, glabrous or sparsely to densely pubescent, without bifid horns at apex but sometimes terminated by 3 minute teeth; stamens 4–7. WA, NT, QLD 6. *C. fascicularis*

1. *Corchorus capsularis* L., Sp. Pl. 529 (1753).

Type: Icones, Plate 261 (lecto: BM-HERM, photo at BRI, fide Robyns & Meijer (1991, p.420)).

Erect subligneous herb to 1.5 m; branchlets glabrous, terete. Leaves narrowly ovate or narrowly elliptic, 5.0–14.0 cm long, 1.0–6.0 cm wide, glabrous above, minutely papillose below; base rounded; apex acuminate; margin serrate or crenate-serrate, with a pair of basal teeth prolonged into setaceous points up to 10 mm long; petiole 5–30 mm long, glabrous apart from a line of short reflexed simple hairs on the adaxial surface. Stipules narrowly linear-ovate, 5–10 mm long, glabrous; apex subulate. Inflorescences lateral, solitary at nodes, 2- or 3-flowered; peduncles 1–2 mm long; pedicels 0.5–1.5 mm long; bracts linear-ovate, c. 1.0 mm long. Buds depressed globose, c. 2.0 mm diameter, shortly apiculate. Sepals 5, narrowly linear-obovate, 3.0–4.0 mm long, 1.0–1.5 mm wide, glabrous, cucullate; apex apiculate; apiculum c. 0.5 mm long. Petals 5, obovate, 4.0–4.5 mm long, c. 2.5 mm wide; claw c. 1.0 mm long, glabrous or with scattered hairs on margin. Androgynophore c. 0.1 mm long; annulus c. 0.5 mm long, crenate. Stamens 20–25; filaments 2.5–3.0 mm long. Ovary obovoid, c. 1.0 mm diameter, sparsely setulose, 10-celled with 10 ovules per cell; style stout, 1.0–1.5 mm long; stigma 5-toothed. Fruiting pedicel ascending to erect; fruit depressed globose, 10–15 mm diameter, longitudinally sulcate, coarsely verrucose, glabrous, 10-valvate; apex impressed; valves without marked transverse septa adaxially. Seeds numerous, \pm rhomboid or \pm obovoid, c. 2.0 mm long, dark brown. **Fig. 1 F–H.** Chromosome number $2n = 14$ & 28 (Goldblatt 1981).

Selected specimens: **Western Australia.** GARDNER DISTRICT: 9.6 km WSW of Mount Waterloo, Jun 1987, *Kenneally* 10421 & *Hyland* (PERTH). **Northern Territory.** DARWIN AND GULF DISTRICT: Finnis River floodplain, Mar 1990, *Cowie* 1005 & *Wilson* (DNA); Fogg Dam area, c. 40 miles [64 km] SE of Darwin, May 1959, *Chippendale* 6186 (BRI, CANB, DNA, MEL, PERTH); Scott Creek area, Apr 1980, *Rankin* 2305 (BRI); Apple Tree Point, Kapalga, May 1982, *Wightman* 27 (DNA); West Alligator/Wildman Rivers floodplain, Apr 1990, *Clark* 2343 (DNA); c. 45 km WNW of Jabiru, Mar 1981, *Craven* & *Whitbread* 7704 (CANB, DNA, MEL); Arnhem Land, Milingimbi, Balma, Apr 1988, *Wightman* 4350 (DNA); Arafura Swamp,

at old Arafura Homestead, May 1990, *Cowie* 1282 (DNA); McKeddies Billabong, Reynolds River, Apr 1981, *Dunlop* 5931 & *Craven* (BRI, CANB, DNA, NSW, MEL); North Daly River floodplain, Mar 1990, *Clark* 1976 (DNA); Tipperary Station, Sulls Run Creek, May 1990, *Leach* 2857 & *Cowie* (DNA); c. 26 miles [40 km] NNW of El Sharana Mine, Feb 1973, *Lazarides* 7847 (BRI, NSW).

Distribution and habitat: *Corchorus capsularis* is considered to be originally a native of southern China (Purseglove 1968) which has become widespread in Asia through its cultivation as a fibre crop. In Australia it occurs sporadically in the “top end” of the Northern Territory and in the Kimberley, Western Australia (**Map 1**). Most collections of this species in Australia have been made only in the last 20 years. However, it was first collected by Holtze in 1890 at Port Darwin. Holtze (1892) considered this species to be “truly indigenous in North Australia” although it has also escaped from cultivation. It grows in moist clay or loam soils on floodplains, swamp margins or estuarine flats in grasslands, forests or woodlands.

Phenology: Flowers recorded from February to May; fruits recorded from March to July and November.

2. *Corchorus olitorius* L., Sp. Pl. 529 (1753).

Type: cultivated specimen, Herb. Cliff. 209 (lecto: BM n.v., photocopy BRI, fide Wild (1963)).

Corchorus olitorius var. *australiensis* Domin, Biblioth. Bot. 89: 380 (1927 ‘1926’). **Type:** Northern Australia: Van Diemens Gulf, May 1818, *A. Cunningham* 296 (holo: K!).

Erect subligneous herb up to 2 m; branchlets glabrous, somewhat angular or sulcate when young. Leaves narrowly ovate to ovate, 3.0–12.0 cm long, (1.0)2.0–5.0 cm wide, glabrous above, glabrous or with scattered short, simple hairs below; base rounded; apex acute to acuminate; margin serrate, usually with a pair of basal teeth prolonged into setaceous points, up to 15 mm long; petiole (5)15–35(60) mm long, glabrous apart from a line of short ascending simple hairs on adaxial surface. Stipules setaceous 7–12 mm long, glabrous. Inflorescences leaf-opposed, solitary at the nodes, 1- to 3-flowered; peduncles very short, up to 1 mm long; pedicels

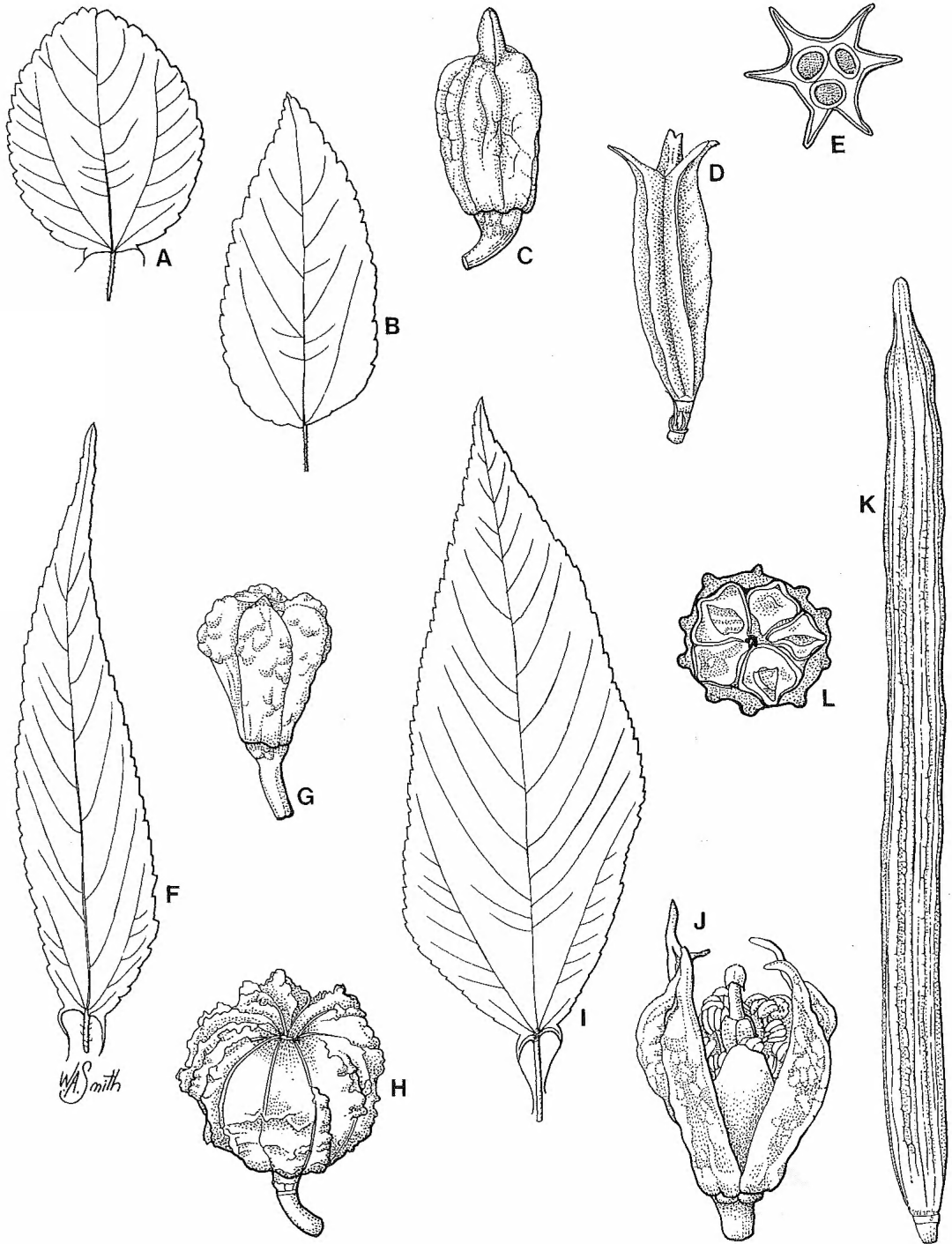


Fig.1. A–E. *C. aestuans*: A & B. leaf $\times 1$. C. bud $\times 12$. D. fruit $\times 2$. E. transverse section of fruit $\times 4$. F–H. *C. capsularis*: F. leaf $\times 1$. G. bud $\times 8$. H. fruit $\times 3$. I–L. *C. olitorius*: I. leaf $\times 1$. J. bud partially open $\times 8$. K. fruit $\times 2$. L. transverse section of fruit $\times 4$. A, Gunness AG1995; B,C, Lazarides 7165; D,E, Halford Q921; F,H, Dunlop 5931 & Craven; G, Cuadra A1095; I, Bean 2909; J, Corbet [AQ 86728]; K,L, Thorne 20688. (All BRI).

2 mm long; bracts narrowly linear-ovate, 1.5–3.0 mm long. Buds obovoid, 1.5–2.5 mm diameter, apiculate. Sepals 5, narrowly linear-obovate, 6.0–8.0 mm long, 2.0 mm wide, glabrous outside, pubescent inside near base; apex caudate, up to 1.0 mm long. Petals 5, narrowly obovate, 6.0–7.0 mm long, c. 2.0 mm wide; claw c. 1.0 mm long, minutely ciliate on margin. Androgynophore 0.2–0.5 mm long; annulus, c. 0.2 mm long. Stamens 30–50; filaments 3.0–4.0 mm long. Ovary cylindrical, 5- or 6-sulcate, 3.0–3.5 mm long, c. 1.0 mm diameter, covered with minute stiff ascending hairs, 5- or 6-celled with 36–42 ovules per cell; style stout, 1.0–2.0 mm long; stigma lobed, fimbriate. Fruiting pedicel erect; fruit somewhat appressed to stem, cylindrical, 30–80 mm long, 3–6 mm diameter, straight, longitudinally 10- to 12-ribbed, glabrous, 5- or 6-valvate; apex straight, undivided, acuminate, 5–10 mm long; valves transversely septate adaxially. Seeds numerous, \pm rhomboid, c. 2.0 mm long, somewhat rugose, matt black. **Fig. 1 I–L.** Chromosome number $2n = 14$ (Bhatt 1976).

Selected specimens: **Western Australia.** GARDNER DISTRICT: 1 km E of Long Spring, Mar 1989, *Keighery* 10743 (PERTH); Kimberley Research Station, Kununurra, Mar 1963, *Lazarides* 6730 (CANB, DNA, PERTH); Kununurra, Mar 1972; *Black* 14c (PERTH). FITZGERALD DISTRICT: Yamerra Gap, Napier Ranger, May 1983, *Fryxell & Craven* 3938 (CANB, MEL, PERTH); Fitzroy River Valley, May 1962, *Royce* 6930 (PERTH). **Northern Territory.** DARWIN AND GULF REGION: Tipperary Station, Bulls Run Creek, May 1990, *Leach* 2870 & *Cowie* (BRI); Station Springs, Mountain Valley Station, Feb 1963, *Swinbourne* 676 (DNA, MEL); O.T. Station, May 1947, *Blake* 17653 (BRI, CANB). VICTORIA RIVER REGION: north side of Wickham River, Apr 1965, *Walter* VD3 (DNA). BARKLY TABLELANDS REGION: No 18 Bore, Mungabroom Station, Aug 1987, *Strong* 1026 (DNA); 3 miles [5 km] SE Rockhampton Downs Homestead, Mar 1959, *Chippendale* 5404 (DNA). **Queensland.** BURKE DISTRICT: Adel's Grove, via Camooweal, Feb 1946, *de Lestang* [AQ 86726] (BRI); Boogan Lagoon, Apr 1974, *Jacobs* 1279 (BRI, CANB). NORTH KENNEDY DISTRICT: Giru, Mar 1933, *White* 8947 (BRI). MITCHELL DISTRICT: Thomson River flood system, 800 m SW of "Waterloo" Homestead, Mar 1989, *Emmott* 269 (BRI). PORT CURTIS DISTRICT: Biloela, Mar 1955, *Wood* [AQ 86737] (BRI). WARREGO DISTRICT: Warrego River crossing, 'Gerah Plains', May 1977, *Purdie* 646E (BRI). MORETON DISTRICT: Esk, Mar 1971, *Harris* [AQ 86684] (BRI); Agricultural College, Lawes, Apr 1955, *Machell* [AQ 86678] (BRI); "Bilarabyn" Veresdale via Beaudesert, Mar 1965, *Williams* B99 (BRI). **New South Wales.** NORTH COAST DISTRICT: Dourigans Gap, Kyogle, Jul 1971, *Ptolomy* [NSW 262063] (NSW); Kyogle district, May 1960, *Vane* [NSW 262065] (NSW).

Distribution and habitat: *Corchorus olitorius* is naturalised pantropically but considered to be originally a native of Indo-Malesian region (Robyns & Meijer 1991). From early Australian records it appears that the first introduction of this species occurred prior to European settlement of the east coast. In Australia, it occurs sporadically across northern Australia from the Kimberley, Western Australia, through central Northern Territory to the east coast of Queensland and southward to northern New South Wales (**Map 2**). It grows mostly in heavy clay soils in grasslands, riverine forests and on swamp margins. It is also recorded along irrigation channels and in cultivated fields.

Phenology: Flowers recorded from February to August; fruits recorded from March to August.

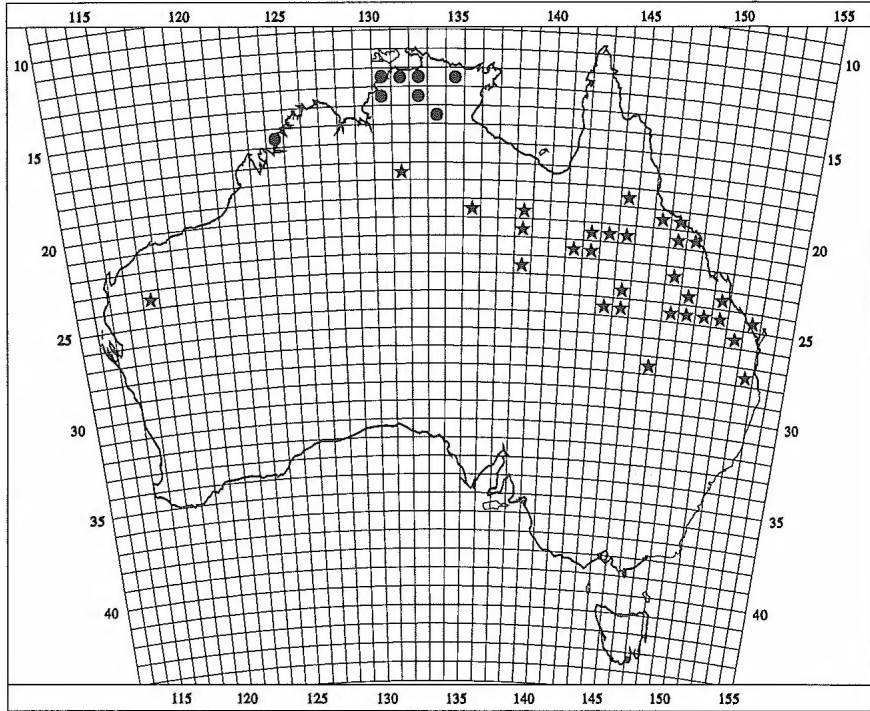
Notes: *C. olitorius* has been cultivated throughout the world as a fibre crop and in the east Mediterranean region for its leaves as a food crop (Purseglove 1968). Everist (1974) reports that the seeds of this species are toxic to stock.

3. *Corchorus aestuans* L., Syst. Nat. edn 10, 1079 (1759). Type: Jamaica, *P. Browne*; [LINN 691.4] (lecto: LINN n.v., IDC 177–12. 356: I 3 (691.4) (BRI), *vide* Fawcett & Rendle (1926)).

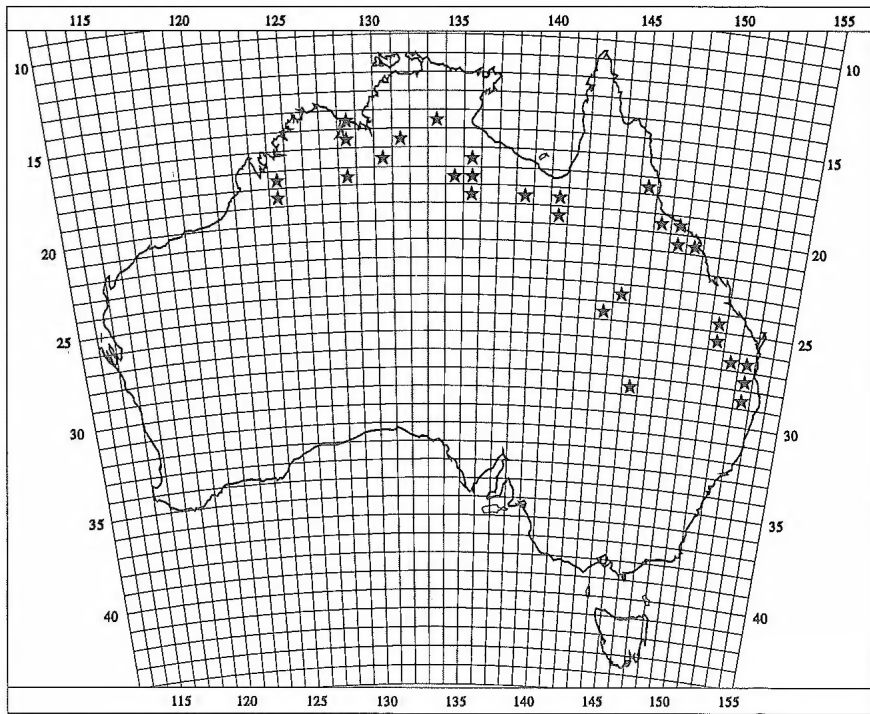
Corchorus acutangulus Lam., Encycl. 2: 104 (1786), *C. acutangulus* Lam. var. *acutangulus*, Domin, Biblioth. Bot. 89: 381 (1927 '1926). Type: Pluk. Tab. 44, f. 1 (1691) (syn); India, *Sonnerat* s.n. (?P) (syn).

Corchorus acutangulus var. *brachycarpus* Domin, Biblioth. Bot. 89: 381 (1927 '1926'). Type: Port Darwin, 7 Dec 1871, *F. Schultz* 847 (holo: K!).

Procumbent, ascending or sometimes erect subligneous herb up to 60 (100) cm high; branchlets terete with a sparse to moderately dense indumentum; hairs hyaline simple of two types; type 1 hairs straight stiff ascending, up to 1 mm long, spread over the whole surface; type 2 hairs curly, up to 0.5 mm long, mostly confined to one side of branchlet. Leaves



Map 1. Distribution of *Corchorus* spp. *C. capsularis* ●, *C. trilocularis* ★.



Map 2. Distribution of *Corchorus olitorius* ★.

narrowly ovate to ovate or elliptic to rotund, 2.0–9.0 cm long, 1.0–4.0 cm wide, covered with scattered strigose hairs above and below; base rounded or slightly cordate; apex acute or obtuse; margin serrate-crenate, sometimes with a pair of basal teeth prolonged into setaceous points, up to 3 mm long; petiole 5–20 mm long, hairy with scattered strigose hairs over whole surface and a line of short curly simple hairs on the adaxial surface. Stipules narrowly triangular, 4–8 mm long, glabrous or with strigose hairs on margin; apex subulate. Inflorescences lateral, solitary at nodes, 1- to 3-flowered; peduncles 1 mm long; pedicels up to 2 mm long; bracts setaceous, 2.0–5.0 mm long. Buds obovoid, 1.0–2.0 mm diameter, shortly apiculate. Sepals 5, linear, 3.0–3.5 mm long, 1.0–1.5 mm wide, cucullate, glabrous, smooth or verrucose outside; apex apiculate; apiculum c. 0.5 mm long. Petals 5, narrowly obovate, 3.0–4.0 mm long, c. 1.5 mm wide; claw 0.2–0.5 mm long, ciliolate on margin. Androgynophore very short or obsolete; annulus c. 0.2 mm long, undulate. Stamens 9–14; filaments 1.0–2.0 mm long. Ovary cylindrical, ribbed, 1.0–1.5 mm long, c. 0.7 mm diameter, ribbed, silky pubescent, 3- or 4-celled with 16–22 ovules per cell; style stout, c. 1.0 mm long; stigma fimbriate. Fruiting pedicel erect; fruit tri- or tetragonous-cylindrical, 13–30 mm long, 3–7 mm diameter (including wings), straight, 6- or 8-winged, glabrous, 3- or 4-valvate; apex with 3 or 4 bifid horns, 4–5 mm long; valves without transverse septa adaxially. Seeds numerous, rhomboid-cylindrical, c. 1.5 mm long, dull brown to black. **Fig. 1 A–E.**

Selected specimens: Western Australia. GARDNER DISTRICT: 13 km S of Kalumburu, King Edward River, Mar 1989, *Keighery* 10672 (PERTH); 8 km SE of new Wyndham Post Office, Apr 1977, *George* 14548 (CANB, PERTH); junction Neville Creek and Calder River, Eastern Walcott Inlet, May 1983, *Kenneally* 8705 (PERTH). FRITZGERALD DISTRICT: creek entering inlet of Talbot Bay, 23 km SE of Cockatoo Island, Apr 1983, *Fryxell & Craven* 3887 (CANB, MEL, PERTH). DAMPIER DISTRICT: Munkajarra, 20 km S of Derby, Apr 1983, *Fryxell* 3847 (CANB, MEL, PERTH). **Northern Territory.** DARWIN AND GULF REGION: Esplanade, Darwin, Jun 1964, *Nelson* 1088 (AD, BRI, DNA); Nightcliff, Darwin, Apr 1948, *Specht* 169 (AD, BRI, CANB, MEL); near Cahill's Crossing, c. 4 miles [6 km] SSE of Cannon Hill, Mar 1973, *Lazarides* 8019 (BRI, CANB, DNA, NSW); c. 35 km W of Jabiru, Mar 1981, *Craven & Whitbread* 7695 (CANB, DNA, MEL); Cooina area, Mar 1982, *Dunlop* 6306 & *Taylor* (DNA);

Hempel Bay, Groote Eylandt, in the Gulf of Carpentaria, May 1948, *Specht* 340 (AD, BRI, CANB, MEL); South Bay, Bickerton Island, in the Gulf of Carpentaria, Jun 1948, *Specht* 535 (AD, BRI, CANB, MEL, NSW); McArthur River near Borrooloola, May 1974, *Pullen* 9296 (CANB, DNA, NSW). VICTORIA RIVER REGION: Timber Creek, Apr 1990, *Evans* 3078 (CANB, DNA). **Queensland.** BURKE DISTRICT: Normanton, May 1935, *Blake* 8938 (BRI); 119 km SSW of Normanton of road to Cloncurry, Jun 1991, *Halford* Q473 (BRI, DNA, MEL). COOK DISTRICT: west bank of Marrett River, Princess Charlotte Bay, *Elsol & Stanley* 605 (BRI); 3.4 km N of Spear Creek on the Development Road, 11.3 km N of the Palmer River Crossing, Mar 1987, *Clarkson* 6701 & *McDonald* (BRI, MEL); site 11/17, 50 yards E of Cobra Creek between Tinaroo Falls and Malone road turnoff on Cairns road, near Mareeba, Feb 1962, *Webb & Tracey* 5876 (BRI). NORTH KENNEDY DISTRICT: Conoonbah, near Townsville, Mar 1933, *White* 8822 (BRI).

Distribution and habitat: *Corchorus aestuans* is a pantropical species which is considered to be originally a native of Latin America (Robyns & Meijer 1991). From early Australian records it appears that the first introduction of this species occurred prior to European settlement of the east coast. *C. aestuans* presently occurs in northern Australia from the Kimberley, Western Australia, through the "top end" of the Northern Territory to north-eastern Queensland (**Map 5**). It grows in a variety of habitats, mostly on clay or sandy soils on floodplains, swamp margins or coastal flats in forests, woodlands or grasslands. It is also recorded as a weed of urban gardens.

Phenology: Flowers recorded in January to July and October; fruits recorded in February to August, October and November.

Notes: This species exhibits variability in a number of morphological features. The most common habit is procumbent to weakly ascending (e.g. *Specht* 535). However, there are some erect forms (e.g. *Craven & Whitbread* 7695). There is also variation in leaf shape and size. Some of this variation can be accounted for by habitat differences. In shady, well-watered habitats, the plants are generally larger and more luxuriant. Variation also occurs in the size of the fruit and size of the wings on the fruit.

4. *Corchorus trilocularis* L., Mant. 1: 77 (1767). Type: Herb. LINN. 691.2 (lecto: LINN n.v., IDC 177–12. 356: I. 1 (691.2) (BRI), *fide* Ghafoor (1974)).

Corchorus rigidusculus Domin, Biblioth. Bot. 89: 381 (1927 '1926'). **Type:** Queensland, apud flumen Flinders River prope opp. Hughenden, Feb 1910, K. Domin [PR 529084] (holo: PR!).

Procumbent to ascending subligneous herb, up to 40 cm high; branchlets terete, glabrous or sparsely covered with two types of simple hairs; type 1 hairs weakly ascending straight, up to 1 mm long, generally spread over the whole surface; type 2 hairs curly, up to 0.5 mm long, mostly confined to one side of branchlet. Leaves ovate to narrowly ovate, narrowly oblong or rarely rotund, 2.0–5.5 cm long, 0.7–2.5 cm wide, glabrous or with scattered short to long stiff ascending hairs on veins and margin; base obtuse or broadly cuneate; apex obtuse or acute; margin crenate-serrate, usually with a pair of basal teeth prolonged into setaceous points, up to 5 mm long; petiole 3–15 mm long, hairy with scattered straight simple hairs over whole surface and a line of short curly simple hairs on the adaxial surface. Stipules setaceous, 3–7 mm long, with a few simple hairs. Inflorescences leaf-opposed, solitary at nodes, 1- to 3-flowered; peduncles and pedicels very short, up to 1 mm long; bracts setaceous, 1.0–3.0 mm long. Buds ellipsoidal, 2.0–3.0 mm diameter, shortly apiculate. Sepals 5, linear, 4.0–6.0 mm long, c. 1.0 mm wide, sparsely to moderately covered with short straight hairs outside, puberulous inside near base; apex apiculate; apiculum up to 0.5 mm long. Petals 5, obovate, 4.0–6.0 mm long, 2.0–3.0 mm wide; claw c. 0.7 mm long, minutely ciliate on margin. Androgynophore c. 0.2 mm long; annulus c. 0.2 mm long, sometimes with undulate margin. Stamens 20–30; filaments c. 3.0 mm long. Ovary trigonous-cylindrical, 2.0–3.0 mm long, c. 1.0 mm diameter, pubescent, 3-celled with 30 ovules per cell; style stout, 1.0–2.0 mm long; stigma fimbriate. Fruiting pedicel erect; fruit cylindrical, 25–70 mm long, 2–3 mm diameter, straight or slightly curved, scabrous, sparsely covered with stiff short simple and stellate hairs, 3-valvate; apex straight, undivided, acuminate, 2–4 mm long; valves partially transversely septate adaxially. Seeds numerous, \pm rhomboid, 1.0–1.5 mm long, matt dark brown to black. **Fig. 2 A–D.** Chromosome number $2n = 14$ (Rao & Datta 1953, Datta *et al.* 1966).

Selected specimens: **Western Australia.** ASHBURTON DISTRICT: Amelia Station, Jun 1978, *Mitchell* 576 (PERTH). **Northern Territory.** VICTORIA RIVER REGION: 10 miles [16 km] NNE of Wavehill Station, Jul 1959, *Lazarides* 6277 (CANB); 15.1 miles [24.3 km] NE Wave Hill Homestead, Apr 1959, *Chippendale* 5780 (DNA, MEL, NSW). BARKLY TABLELANDS REGION: Govt. Reserve No 7, South Barkly, Jan 1975, *Pavlov* M353 (DNA). **Queensland.** BURKE DISTRICT: 67 km WNW of Mt Isa, 6 km N of Mingera Creek, Apr 1989, *Harris* 286 (BRI); 25 miles [40 km] NNE of Camooweal, May 1948, *Perry* 968 (BRI, CANB, DNA). NORTH KENNEDY DISTRICT: Kennedy Highway, 40 km N of Lynd Junction, Mar 1988, *Champion* 336 (BRI); top of Peak - Bogie Range, Sep 1950, *Smith* 4552 (BRI). GREGORY NORTH DISTRICT: Frensham Station, near Kynuna, May 1936, *Blake* 11476 (BRI). MITCHELL DISTRICT: "Noonbah", on Noonbah Lake, 160 km SW of Longreach, May 1990, *Emmott* 393 (BRI). LEICHHARDT DISTRICT: Tanderra, (Nardoo) about 45 miles [72 km] SW of Springsure, Feb 1960, *Johnson* 1304 (BRI); Orion Downs, Jun 1951, *Everist* 4350 (BRI, CANB); Minerva, Mar 1935, *Blake* 7917 (BRI, CANB). MARANOVA DISTRICT: Elmina Station, Mar 1947, *Everist* 2949 (BRI). BURNETT DISTRICT: Brain Pastures Station near Gayndah, Apr 1984, *Neldner & Paton* 1390 (BRI). WIDE BAY DISTRICT: near city centre, Bundaberg, Mar 1980, *Stanley* 879 (BRI). MORETON DISTRICT: Kalbar, S of Ipswich, Sep 1935, *Smith* [AQ 86789] (BRI).

Distribution and habitat: *C. trilocularis* is widespread in Africa, tropical Asia and Australia; probably originally a native of tropical Africa and tropical Asia. It appears from the early records of this species in Australia that it was introduced into the country with the European settlement of the east coast. In Australia it occurs in southern, central and north-western Queensland, with isolated occurrences in central Northern Territory, and with a disjunct population in the Pilbara region, Western Australia (**Map 1**). It grows mostly in clay soils in grasslands and woodlands. It is occasionally recorded as a weed of cultivation.

Phenology: Flowers recorded from January to June and September; fruits recorded from January to November.

Notes: The fruits of *C. trilocularis* and *C. tridens* are often distorted and twisted due to insect damage. *C. trilocularis* is sometimes confused with *C. tridens*. The distinguishing features of these two species are discussed under *C. tridens*.

5. *Corchorus tridens* L., Mant. 2: 566 (1771), *C. tridens* L. var. *tridens*, Domin, Biblioth. Bot. 89: 380 (1927 '1926'). **Type: Burm.**

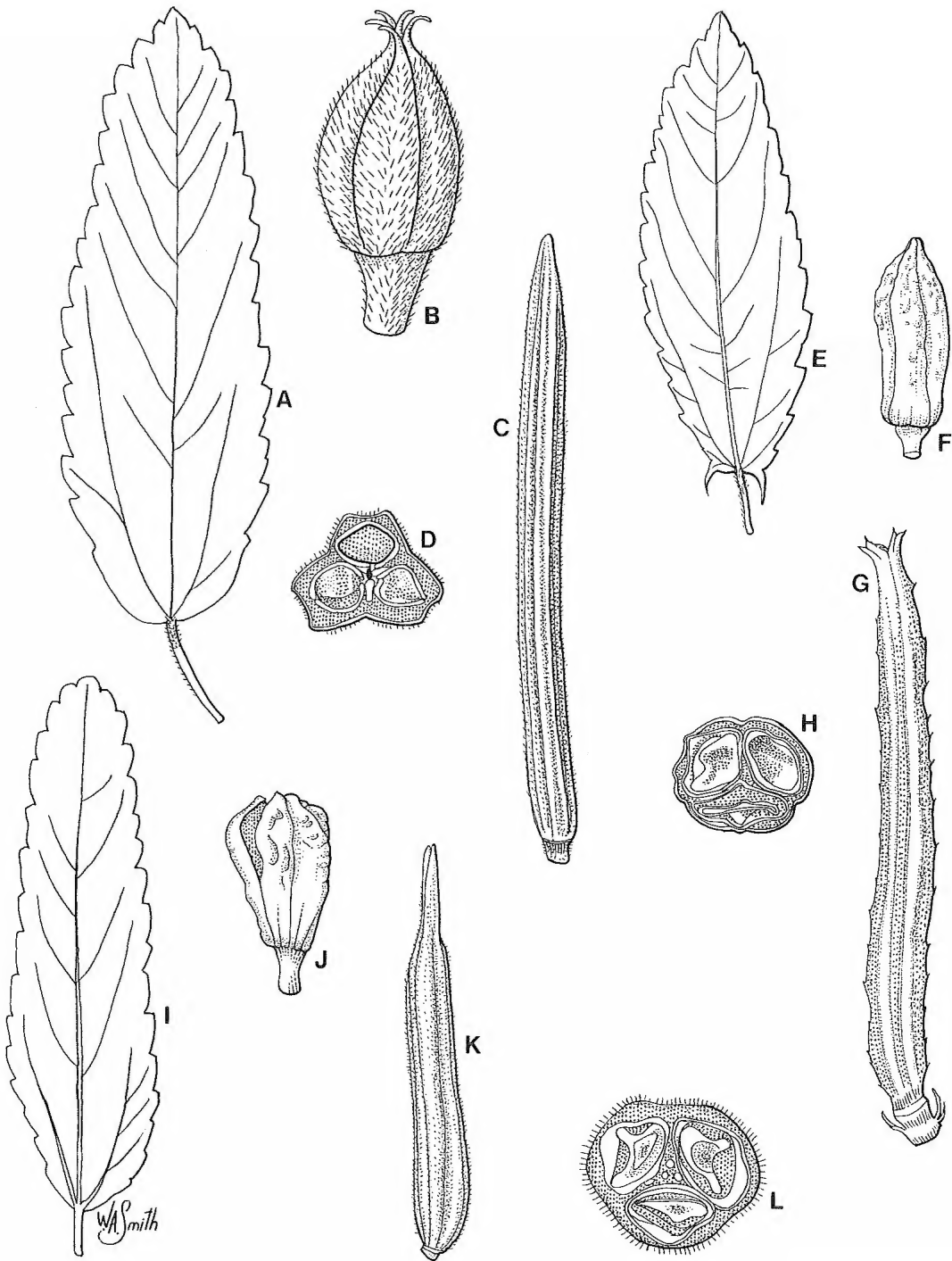


Fig.2. A–D. *C. trilocularis*: A. leaf $\times 1.5$. B. bud $\times 8$. C. fruit $\times 2$. D. transverse section of fruit $\times 6$. E–H. *C. tridens*: E. leaf $\times 3$. F. bud $\times 8$. G. fruit $\times 4$. H. transverse section of fruit $\times 12$. I–L. *C. fascicularis*: I. leaf $\times 3$. J. bud $\times 16$. K. fruit $\times 4$. L. transverse section of fruit $\times 12$. A, Emmott 393; B, Everist 4350; C,D, Blake 11476; E,F, Pollock [AQ 86780]; G,H, Russell-Smith 7718A & Lucas; I–L, Pullen 8913. (All BRI).

f., Fl. Indica 123, t. 37 fig. 2 (1768) (lecto: here designated).

Corchorus tridens var. *euryphyllus* Domin, Biblioth. Bot. 89: 381 (1927 '1926').

Type: North Coast Islands, *R. Brown* s.n., Iter Australiense 1802–05 No 5182 (holo: K!).

Procumbent subligneous herb up to 60 cm high; branchlets terete, glabrous or with scattered short rigid simple hairs. Leaves narrowly elliptic or narrowly ovate, 3.0–5.0 cm long, 0.7–2.0 cm wide, glabrous or sparsely covered along veins with short ascending, stiff simple hairs; base obtuse or rounded; apex acute or obtuse; margin serrate-crenate, sometimes with a pair of basal teeth prolonged into setaceous points, up to 3 mm long; petiole 4–13 mm long, hairy with scattered hairs over whole surface and a line of short curved simple hairs on the adaxial surface. Stipules setaceous, 2–4 mm long, glabrous. Inflorescences leaf-opposed, solitary at nodes, 2- to 4-flowered; peduncles very short, up to 1 mm long; pedicels 0.5 mm long; bracts subulate, c. 1.0 mm long. Buds narrowly obovoid, 1.0–2.0 mm diameter. Sepals 5, narrowly linear-obovate, 2.5–3.5 mm long, 0.5–1.0 mm wide, glabrous; apex acute. Petals 5, narrowly obovate, 3.0–3.5 mm long, 1.0–1.5 mm wide; claw very short, minutely ciliate on margin. Androgynophore c. 0.2 mm long; annulus c. 0.1 mm long. Stamens 9–11; filaments 1.0–2.0 mm long. Ovary trigonous-cylindrical, ribbed, 1.5–2.5 mm long, c. 0.5 mm diameter, strigillose, 3-celled with 20 ovules per cell; style stout, c. 1.0 mm long; stigma fimbriate. Fruiting pedicel spreading to erect; fruit cylindrical, 25–35 mm long, 1.5–2.0 mm diameter, straight or slightly curved, somewhat longitudinally ribbed, glabrous or with scattered scabrous hairs, 3-valvate; apex attenuate, 1–3 mm long, terminated by 3 bifid horns, up to 1 mm long; valves without transverse septa adaxially. Seeds numerous, \pm rhomboid-cylindric, 1.0–1.5 mm long, matt, dark brown to black. **Fig. 2E–H.** Chromosome number $2n = 14$ & 28 (Fedorov 1974, Goldblatt 1981).

Selected specimens: Western Australia. GARDNER DISTRICT: 9.9 km N of Long Spring, Mar 1989, *Keighery* 10721 (PERTH); Kununurra, Feb 1964, *Richards* 24 (CANB,

PERTH). DAMPIER DISTRICT: 5 km N of Van Emmerick Range, May 1988, *Cranfield* 6706 (CANB, PERTH); Windjana Gorge, Apr 1988, *Cranfield* 6356 (PERTH). HALL DISTRICT: Bungle Bungle N.P., Osmond Creek, W of Osmond Yard, Jun 1989, *Menkhorst* 395 (DNA, PERTH). CANNING DISTRICT: Rudall River N.P., Little Sandy Desert, Apr 1979, *Mitchell* 845 (DNA). Northern Territory. DARWIN AND GULF REGION: Elsey Falls, E of Mataranka, Apr 1956, *Burbidge* 5065 (CANB). VICTORIA RIVER REGION: 10 km N of Coomarie Spring, Tanami Desert, Mar 1981, *Latz* 8586 (DNA); 32 miles [51 km] NE [of] Inverway, May 1989, *Chippendale* 5935 (DNA). BARKLY TABLELANDS REGION: No 20 Bore, Brunchilly Station, Jun 1984, *Strong* 351 (DNA). CENTRAL NORTHERN REGION: Gosse River, Murchison Range, Apr 1983, *Latz* 9685 (DNA). CENTRAL SOUTHERN REGION: Tobermoray Station, Field River, May 1972, *Dunlop* 2584 (DNA). Queensland. BURKE DISTRICT: Adel's Grove, via Camooweal, Mar 1946, *de Lestang* 227 (BRI); Hughenden, undated, *Francis* [AQ 86766] (BRI); Sussex Park, Hughenden, Jun 1934, *Blake* 6230 (BRI); Granada, about 50 miles [80 km] N of Cloncurry, Apr 1954, *Everist* 5217 (BRI, DNA). COOK DISTRICT: Newcastle Range, Apr 1907, *Blackman* 17 (BRI). GREGORY NORTH DISTRICT: Tick Hill, 44 km E of Dajarra, 14 km N of the Monument, Apr 1990, *Harris* 515 (BRI). NORTH KENNEDY DISTRICT: Ayr, SE of Townsville, undated, *Michael* 1705 (BRI).

Distribution and habitat: *C. tridens* is widespread in Africa, Asia and Australia. From early Australian records it appears that this species was present prior to European settlement of the east coast. In Australia it occurs across northern parts of the continent from the Pilbara, Western Australia, through central Northern Territory to north-eastern Queensland (**Map 3**). It grows on clay or sandy soils, in woodlands, shrublands or grasslands, usually on floodplains, coastal flats or on the edge of salt pans.

Phenology: Flowers recorded from January to June; fruits recorded from February to August.

Notes: *C. tridens* may be confused with *C. trilocularis* but is distinguishable from that by its having short, bifid, divaricate horns at the apex of the fruit and having only simple hairs on the fruit. *C. trilocularis* lacks horns on the fruit and has branched hairs as well as simple hairs on the fruit.

Typification: Wild (1984) noted that there are no specimens in LINN that could be Linnaeus' original material and that the two plates cited by him (Pluk. phyt. t. 127 f. 4 (1692) and Burm. ind. 123 t. 37 f. 2 (1768)) are the elements that have to be considered in the typification of *C. tridens*. Dr C. Jarvis (pers. comm.) informs

me that he also has been unable to find any original material of *C. tridens*. Wild presented a good case for Burman's figure to be a satisfactory element for lectotypification of *C. tridens* L., but he did not take the final step and nominate it as lectotype. Robyns and Meijer (1991) dismissed Burman's figure as a possible type by inferring that it does not match Linnaeus' description and identified it as *C. trilocularis* L. I have examined the plates in question and agree with Wild that the Linnaean description clearly relates to Burman's figure and that the figure does not match the description of *C. trilocularis* L. as suggested by Robyns and Meijer. Burman's figure is here, therefore, selected as the lectotype of *C. tridens* L.

6. *Corchorus fascicularis* Lam., Encycl. 2: 104–105 (1786). Type: East Indies, *Sonnerat*, (?P) n.v.

Procumbent subliguous herb up to 20 cm high; branchlets terete, glabrous or sparsely covered with weak simple hairs. Leaves narrowly oblong to oblong or narrowly ovate, 1.0–4.5 cm long, 0.5–1.0 cm wide, glabrous; base and apex rounded to obtuse; margin crenate; petiole 2–5 mm long, glabrous except for a line of short curly simple hairs on the adaxial surface. Stipules narrowly ovate, 1–3 mm long. Inflorescences leaf-opposed, solitary at nodes, 2- to 4-flowered; peduncles and pedicels very short, c. 0.5 mm long; bracts subulate, up to 1.0 mm long. Buds obovoid, c. 1.0 mm diameter. Sepals 5, linear, 1.0–2.0 mm long, c. 0.5 mm wide; glabrous; apex acute. Petals 1 to 5, narrowly obovate, 1.0–2.0 mm long, c. 0.5 mm wide; claw obsolete or very short < 0.1 mm long, glabrous. Androgynophore obsolete; annulus present. Stamens 4–7; filaments c. 1.0 mm long. Ovary trigonous-cylindrical, c. 1.0 mm long, c. 0.5 mm diameter, puberulous, 3-celled with 12–14 ovules per celled; style stout, 0.1–0.5 mm long; stigma fimbriate. Fruiting pedicel erect or spreading; fruit cylindrical 10–20 mm long, 2 mm diameter, straight or slightly curved, smooth, glabrous or sparsely to densely pubescent, 3-valvate; apex straight, acuminate, 2–3 mm long, sometimes terminated by 3 very short teeth, c. 0.2 mm long; valves without conspicuous transverse septa adaxially. Seeds numerous, ± compressed rhomboid-cylindrical

or compressed obovoid, 1.0–2.0 mm long, dark brown. **Fig. 2 I–L.** Chromosome number $2n = 14$ (Rao & Datta 1953, Datta *et al.* 1966).

Selected specimens: **Western Australia.** DAMPIER DISTRICT: 3 km SE of Brooking Gorge, Apr 1988, *Cranfield* 6432 (CANB, PERTH); Fitzroy Crossing, May 1927, *Ewart* [PERTH 1532774] (PERTH). **Northern Territory.** DARWIN AND GULF REGION: Daly River subcoastal area, Apr 1964 *Muspratt* R514 (BRI, DNA); O.T. Station, May 1947, *Blake* 17651 (BRI). BARKLY TABLELANDS REGION: Newcastle Waters, Apr 1959, *Chippendale* 5840 (BRI, DNA); Kilgour Gorge, tributary W of gorge, Mallapunyah Springs Station, May 1984, *Halford* 84594 (DNA). **Queensland.** BURKE DISTRICT: upper Alexandra River (Landsborough River), along the Donors Hill - Burketown road near Talawanta Station, Apr 1974, *Pullen* 8913 (BRI, CANB, DNA, NSW); Wondoola - Iffley area, Apr 1953, *Brown* [AQ 86666] (BRI); Canobie Homestead, about 160 km NNE of Cloncurry, Apr 1954, *Everist* 5298 (BRI); Glengalla: 63 miles [101 km] N of Maxwellton, Jun 1947, *Everist* 3038 (BRI).

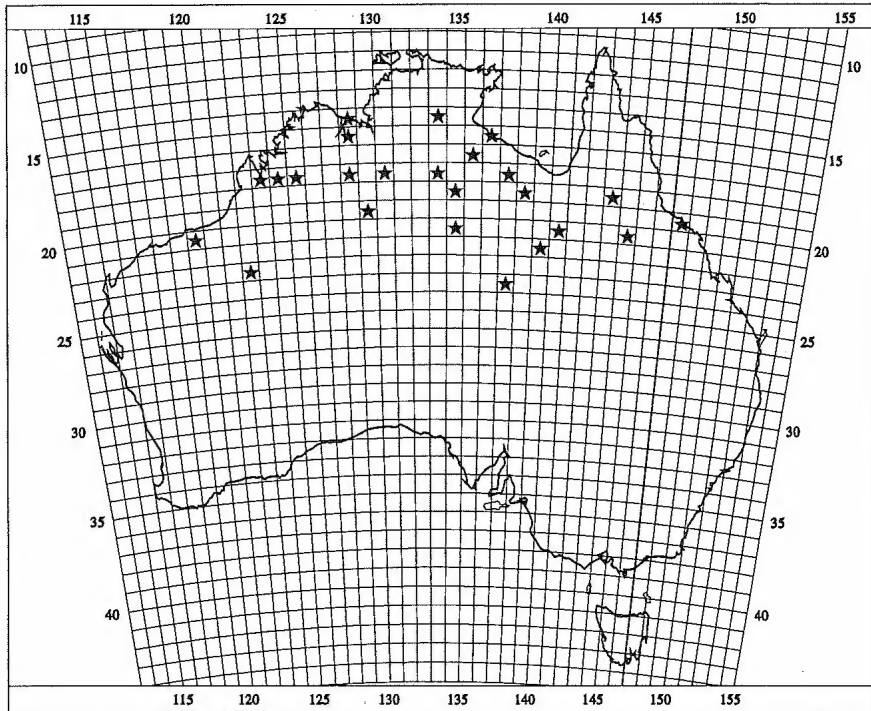
Distribution and habitat: *Corchorus fascicularis* occurs in tropical Africa to Burma and Australia. From early Australian records it appears that this species was present prior to European settlement of the east coast. In Australia it occurs sporadically across the north of the continent from Fitzroy Crossing, Western Australia, central Northern Territory from Victoria River to the McArthur River and in north-western Queensland from near Burketown to Richmond (**Map 4**). It grows in mostly clay through rarely sandy soils on plains and river flats.

Phenology: Flowers recorded in April; fruits recorded from May to July.

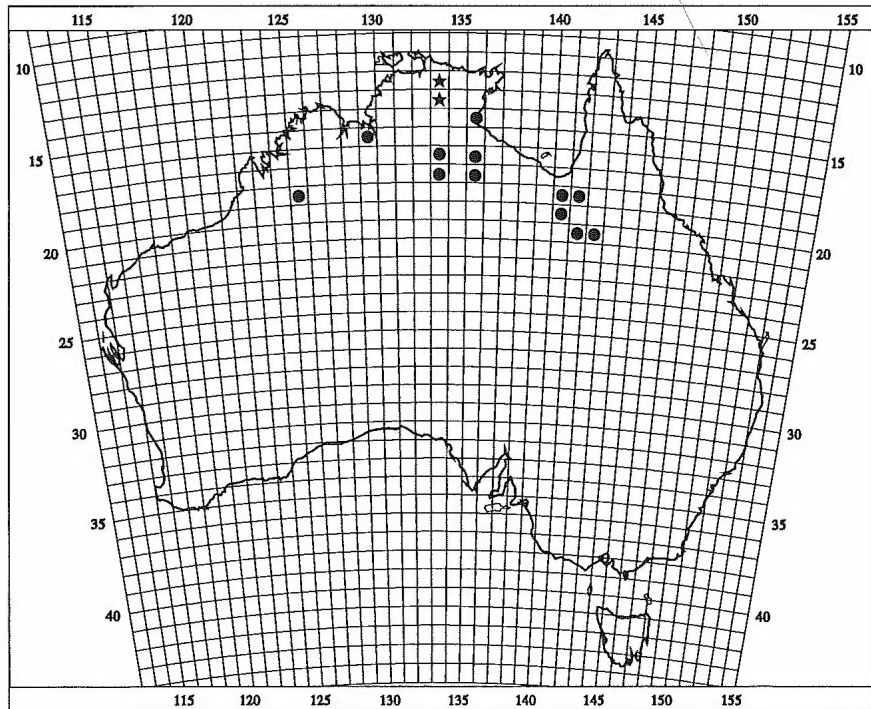
Notes: *C. fascicularis* occasionally has three very small teeth at the apex of the fruit which could lead to it being confused with *C. tridens*. However, it can be distinguished from that by its soft spreading hairs on the fruit and the attenuate apex of the fruit compared to the stiff scabrous hairs and the somewhat truncate apex of the fruit of *C. tridens*.

7. *Corchorus cunninghamii* F. Muell., Fragm. 3: 8 (1862). Type: Moreton Bay, *Stuart* [MEL 1599420] (lecto, designated here: MEL).

Ascending subshrub to 1.5 m high; branchlets often reddish, terete, glabrous or with scattered



Map 3. Distribution of *Corchorus tridens* ★.



Map 4. Distribution of *Corchorus* spp. *C. fascicularis* ●, *C. macropterus* ★.

minute curved simple hairs. Leaves narrowly ovate to ovate or elliptic-ovate, 5.0–15.0 cm long, 1.5–5.0 cm wide, glabrous or sparsely pubescent on both surfaces; base rounded; apex acute to acuminate; margin irregularly serrate; petiole 10–20 mm long, glabrous apart from a line of short curly simple hairs on the adaxial surface. Stipules ovate, turgid proximally, c. 1 mm long, red, glabrous, with a single nectariferous pore on abaxial surface; apex acuminate. Inflorescences leaf-opposed, solitary at nodes, 2- to 7-flowered; peduncles 2–7(17) mm long; pedicels 5–12(20) mm long; bracts ovate, c. 1.0 mm long. Buds pyriform, 3.0–4.0 mm diameter. Sepals 4, narrowly obovate, 7.0–11.0 mm long, 1.5–2.5 mm wide, glabrous or sparsely pubescent outside, pubescent on margin near base; apex acute to acuminate. Petals 4, narrowly obovate, 9.0–11.0 mm long, 3.0–5.0 mm wide; claw 0.5–1.0 mm long, minutely ciliate on margin. Androgynophore c. 0.7 mm long; annulus c. 0.2 mm long. Stamens 60–80; filaments 4.0–7.0 mm long. Ovary ellipsoid, weakly 3- or 4-ribbed, 1.5–3.0 mm long, c. 1.0 mm diameter, glabrous, 3- or 4-celled with 18–22 ovules per cell; style slender, 2.5–6.0 mm long; stigma minutely toothed. Fruiting pedicel ascending to erect; fruit narrowly ellipsoid, 15–35 mm long, 4–6 mm diameter, straight or slightly curved, smooth, glabrous, dehiscing by longitudinal valves along the length of the capsule (apex of capsule not splitting), 3- or 4-valvate; base attenuate; apex acute to somewhat rostrate; valves without transverse septa adaxially. Seeds 2–22 per capsule, irregularly obovoid or \pm rhomboid, 2.0–3.0 mm long, matt brown to black. **Fig. 3 A–D.**

Selected specimens: Queensland. MORETON DISTRICT: Ithaca Creek, undated, *F.M. Bailey* [AQ 86654] (BRI); Enoggera, Nov 1887, *F.M. Bailey* [AQ 86648] (BRI); 3 Mile Scrub, Enoggera Creek, Jul 1874, *F.M. Bailey* [AQ 86649] (BRI); Peachey's Scrub, Nov 1887, *Simmonds Herb.* [AQ 86651] (BRI); Peachey's Scrub, Nov 1887, *Shirley* [AQ 86650] (BRI); Pullenvale, SW of Brisbane, Dec 1983, *Jessup* 580 (BRI); Mt Cotton, May 1932, *White* 8413 (BRI); upper Ormeau, 20 km SW of Beenleigh, Mar 1990, *Bird & Orford* 300 (BRI, MEL); Cliff Barron's Road, Upper Ormeau, Feb 1989, *Thompson & Leiper* [AQ 455967] (BRI). New South Wales. NORTH COAST DISTRICT: Toonimbar [Toonimbar] Range, near Kyogle, Mar 1944, *White* 12509 (BRI); Bexhill, Mar 1891, W.B. 181 (MEL).

Distribution and habitat: *C. cunninghamii* is endemic to Australia. It occurs in south east Queensland and north east New South Wales (**Map 5**). It grows in the narrow ecotone between eucalypt forests and Araucarian microphyll vine forests on shallow soils that are stony and well drained on hilly terrain. *C. cunninghamii* no longer occurs in a number of the localities close to Brisbane where it was previously known from for example Peachey's Scrub, Ithaca Creek and 3 Mile Scrub, Enoggera Creek, and is considered to be endangered in the wild.

Phenology: *C. cunninghamii* has been recorded to flower and fruit throughout the year. However, the peak flowering period is from November to May.

Conservation status: *C. cunninghamii* has a conservation coding of 3E according to Thomas and McDonald (1989) and E by ANZECC (1993). *Corchorus cunninghamii* is listed as endangered on the schedule of plant species declared as "protected wildlife" under the regulations of the Queensland Nature Conservation Act 1992.

Notes: It is clear from Mueller's protologue ("Fructus juvenilis fusiformi-elipsoideus, maturus nondum cognitus") that he saw only immature fruit of this species. However, this is sufficient to clearly identify the species that he had in mind. Examination of original material at MEL and K revealed that only one specimen (Moreton Bay, Stuart [MEL 1599420]) has fruit and this fruit is immature. Sheet MEL 1599420 is here selected as lectotype of Mueller's *C. cunninghamii*. The specimen from Burnett and Dawson River collected by F. Mueller (MEL 223667), lacks fruit but is clearly not of this species. It is more appropriately placed under *C. hygrophilus*.

C. cunninghamii is unique amongst the Australian *Corchorus* taxa in that its capsules split along longitudinal lines, with the apex of the fruit remaining intact, as opposed to the rest of the species in which the fruits split from the apex downwards.

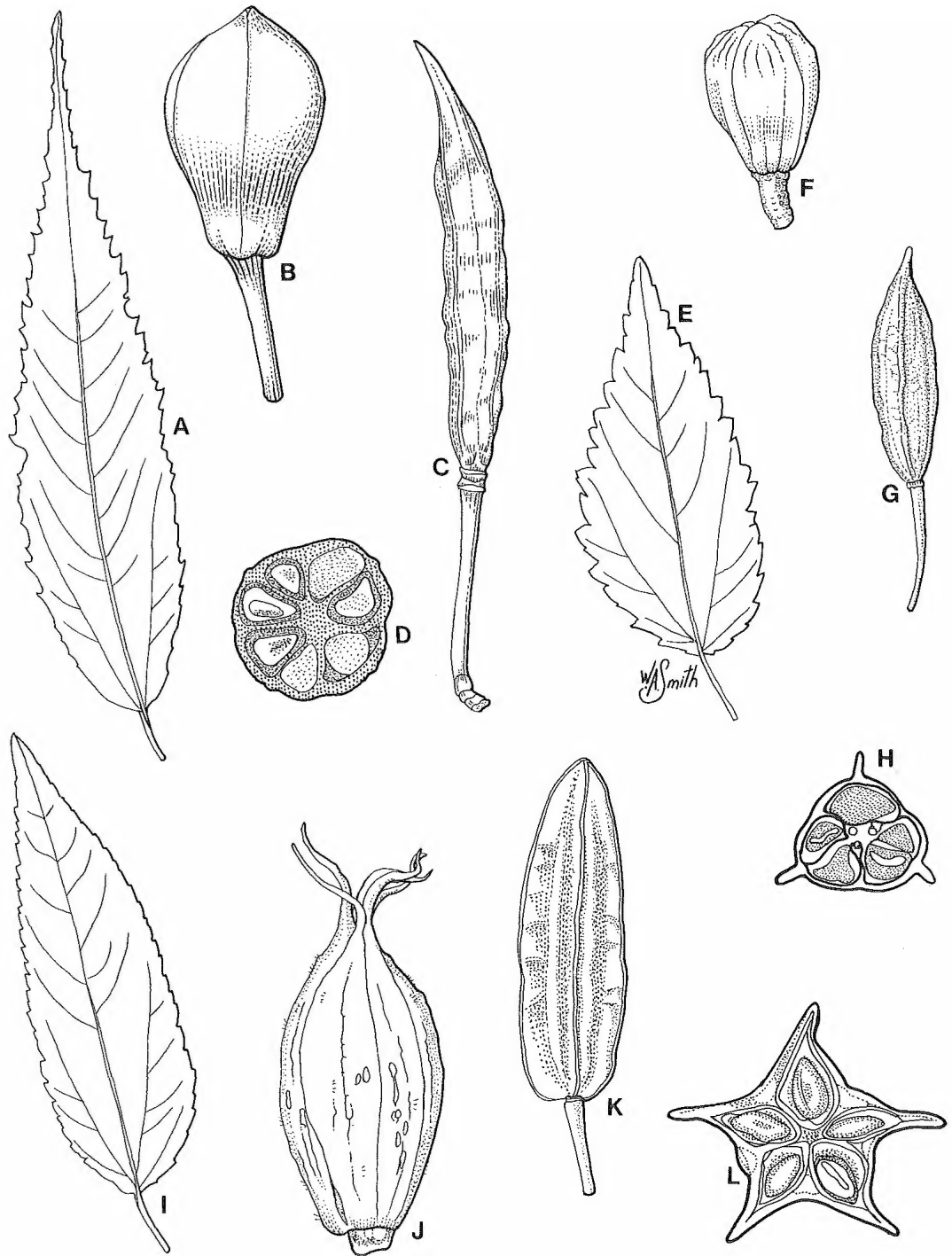


Fig.3. A–D. *C. cunninghamii*: A. leaf $\times 1$. B. bud $\times 5$. C. fruit $\times 2$. D. transverse section of fruit $\times 5$. E–H. *C. thozetii*: E. leaf $\times 1$. F. bud $\times 5$. G. fruit $\times 2$. H. transverse section of fruit $\times 5$. I–L. *C. macropterus*: I. leaf $\times 1$. J. bud $\times 5$. K. fruit $\times 2$. L. transverse section of fruit $\times 5$. A–D, Halford Q1717(BRI); E, Thozet 490 (MEL 1599036) (MEL); F, O'Shanesy 1126 (MEL); G, Thozet 490 (MEL 1599037) (MEL); I–L, Craven & Wightman 8316 (BRI).

8. *Corchorus thozetii* Halford, sp. nov. valde similis *C. cunninghamii* sed capsulis brevioribus (10.0–17.0 mm longis contra capsulas 15.0–35.0 mm longas) angularibusque costis 3 vel 4 angustis longitudinalibus contra capsulas rotundatas laevesque distinguitur. **Typus:** Queensland, Port Curtis District. Rockhampton, *Thozet* 490 (holo: MEL (MEL 1599036); iso: MEL (MEL 1599037)).

Ascending (?) perennial subshrub to 60 cm high, general appearance green; branchlets terete, glabrous. Leaves narrowly ovate to ovate, 5.0–7.0 cm long, 1.5–3.0 cm wide, glabrous; base rounded; apex acute to acuminate; margin serrate; petiole 10–20 mm long, glabrous apart from a line of short curly simple hairs on the adaxial surface. Stipules ovate, turgid proximally, 2–3 mm long, glabrous, with a single nectariferous pore on abaxial surface; apex acuminate. Inflorescences leaf-opposed, solitary at nodes, 4- or 5-flowered; peduncles 2–3 mm long; pedicels 2–3 mm long; bracts narrowly ovate, c. 1.0 mm long. Buds pyriform, 3.0–4.0 mm diameter. Sepals 4, linear-obovate, 6.0–6.5 mm long, 1.5–2.0 mm wide, mostly glabrous except a few hairs on margin near base; apex acute. Petals 4, narrowly obovate, 6.0–6.5 mm long, c. 3.0 mm wide; claw c. 0.6 mm long, minutely ciliate on margin. Androgynophore c. 0.2 mm long; annulus c. 0.2 mm long. Stamens 50–60; filaments 4.0–5.0 mm long. Ovary trigonous-ellipsoid, 1.3–1.5 mm long, c. 0.8 mm diameter, 3- or 4- sulcate, glabrous, 3- or rarely 4-celled with 12–14 ovules per cell; style slender, c. 1.5 mm long; stigma minutely toothed. Fruiting pedicel ascending to erect; fruit narrowly trigonous-ellipsoid rarely tetragonous-ellipsoid, 10–17 mm long, 3–5 mm wide, smooth, 3- or 4-ribbed, smooth, glabrous, 3- or 4-valvate; base obtuse; apex obtuse to somewhat rostrate; valves without transverse septa adaxially. Seeds numerous, ± rhomboid-cylindric or irregularly obovoid, 1.5–2.5 mm long, matt brown to black.

Fig. 3 E–H.

Additional specimen examined: Queensland, PORT CURTIS DISTRICT: near Rockhampton, Aug 1869, *O'Shanesy* 1126 (MEL).

Distribution and habitat: *C. thozetii* is endemic to Australia. As the species is known from only two specimens collected last century, the locality records for *C. thozetii* are vague. It is known only from somewhere near Rockhampton in the central east coast of Queensland (**Map 5**), where it was noted by the collector *O'Shanesy* to occur in Brigalow scrub.

Phenology: The single collection of flowering and fruiting material seen was made in August.

Conservation status: This species has not been collected during the last 100 years. There has apparently been no systematic search made of possible localities to look for it. A conservation coding of presumed extinct (X) is appropriate.

Etymology: This species is named in honour of Mr A. Thozet (1826–1878) who was an avid botanical collector in Central Queensland.

Notes: *C. thozetii* closely resembles *C. cunninghamii* but can be distinguished from that by its shorter (10.0–17.0 mm long compared with 15.0–35.0 mm long) trigonous- or tetragonous-ellipsoid fruit with 3 or 4 narrow longitudinal ribs compared with the narrowly ellipsoid fruit without longitudinal ribs of *C. cunninghamii*.

9. *Corchorus macropterus* G.J. Leach & Cheek, Kew Bull. 47(3): 513 (1992).
Type: Australia, Northern Territory. DARWIN AND GULF REGION: Arnhem Land, 10 km S of Oenpelli, 12°23'S 133°10'E, 24 May 1988, A.A. *Munir* 5838 (holo: n.v.; iso: K n.v. (photo at BRI)).

Erect shrub 1–2 m tall; branchlets terete, glabrous or sparsely covered with minute, erect, simple hairs. Leaves narrowly ovate or narrowly elliptic to elliptic, 4.0–13.0 cm long, 1.0–5.0 cm wide, glabrous; base rounded; apex acuminate; margin serrate; petiole 6–28 mm long, glabrous apart from a line of short, erect simple hairs on adaxial surface. Stipules ovate, turgid proximally, 3–5 mm long, glabrous, with a single nectariferous transverse groove on abaxial surface; apex subulate. Inflorescences axillary or leaf-opposed, solitary at nodes, 1- to 4-flowered; peduncles up to 1 mm long; pedicels 3–4 mm long; bracts narrowly ovate, 2.0–5.0 mm

long. Buds broadly ovoid, 4.0–5.0 mm diameter, with 5 spreading caudae at apex, up to 5 mm long. Sepals 5, narrowly elliptic to elliptic, 8.0–18.0 mm long, 2.0–3.5 mm wide, indumentum outside absent or sometimes sparsely covered with minute simple and stellate hairs, inside a few minute simple hairs near base; apex caudate, 2.0–5.0 mm long. Petals 5, obovate to circular, 7.0–11.0 mm long, 5.0–8.0 mm wide; claw c. 1.0 mm long, ciliate on margin. Androgynophore 0.3–0.4 mm long; annulus c. 0.2 mm long. Stamens 140–200, filaments 2.0–6.0 mm long. Ovary conical to ellipsoid, very strongly 5-winged, 2.0–3.0 mm long, 1.0–1.5 mm diameter, glabrous, 5-celled with 20–24 ovules per cell; style terete, c. 4.0 mm long; stigma fimbriate. Fruiting pedicel erect; fruit ellipsoid, 20–40 mm long, 8–15 mm diameter, straight, longitudinally 4- or 5-winged, smooth, glabrous, dehiscing only at apex, 4- or 5-valvate; apex obtuse, with a black obtuse mucro, c. 0.5 mm long; valves without transverse septa adaxially. Seeds 8 to 15 per cell, \pm rhomboid-cylindric to discoid, 1.0–2.0 mm long, matt or shiny brown to black. **Fig. 3 I–L.**

Additional specimens examined: Northern Territory. DARWIN AND GULF DISTRICT: Oenpelli, May 1981, *Bonney* (DNA); 6 km from Oenpelli on Springs Rd, Jun 1981, *Bonney* (DNA); beside the road to East Alligator River, Jul 1986, *Gartrell & Brennan* UNSW19754 (CANB); Mt Gilruth, Mar 1984, *Craven & Wightman* 8316 (BRI).

Distribution and habitat: *C. macropterus* is endemic to Australia. It is known only from Arnhem Land, Northern Territory (**Map 4**). It grows on sandy soil near creeks flowing between sandstone cliffs and on swampy alluvium on sandstone plateaus on rainforest margins and amongst tall grasses.

Phenology: Flowers recorded in March, May to July; fruits recorded from March, May and June.

Notes: *C. macropterus* is a very distinctive species because of its prominent 5-winged fruit. *C. aestuans* is the only other species of *Corchorus* in Australia with prominent wings on the fruit. *C. macropterus* is easily distinguished from *C. aestuans* by having larger flowers, fruits and leaves. *C. macropterus* is more closely allied to *C. cunninghamii*, *C. thozetii* and *C. hygrophilus*

from Queensland but differs from them in having sepals with long awns, shortly obovate to circular petals, 140–200 stamens and strongly 5-winged fruit.

10. *Corchorus hygrophilus* A. Cunn. ex Benth., Fl. Austral. 1: 276 (1863). Type: [Queensland. NORTH KENNEDY DISTRICT:] Cleveland Bay, June 1819, *A. Cunningham* 200 (holo: K!).

Ascending subshrub to 50 cm high; branchlets terete, glabrous or sparsely covered with minute simple hyaline hairs or sometimes minute glandular papillose hairs. Leaves narrowly ovate to broadly ovate, 8.0–12.0 cm long, 2.0–7.0 cm wide, glabrous or with scattered minute simple hairs on both surfaces; base rounded; apex acute to acuminate; margin serrate; petiole 10–20 mm long, glabrous apart from a line of short curly simple hairs on the adaxial surface. Stipules ovate, turgid proximally, 3–4 mm long, glabrous, with a single nectariferous pore on abaxial surface; apex subulate. Inflorescences leaf-opposed, solitary at nodes, 6- to 8-flowered; peduncles 3–5 mm long; pedicels 3–4 mm long; bracts ovate, c. 1.0 mm long. Buds pyriform, 3.0–4.0 mm diameter. Sepals 4, narrowly obovate, 7.0–9.0 mm long, 2.0–3.0 mm wide, glabrous except for ciliolate margin near base; apex acute. Petals 4, obovate, 6.0–8.0 mm long, 3.0–4.0 mm wide; claw 1.0–1.5 mm long, minutely ciliate on margin. Androgynophore 0.4–0.5 mm long; annulus up to 0.3 mm long. Stamens 55–80; filaments 4.0–6.0 mm long. Ovary subglobose, 0.8–1.0 mm diameter, minutely papillose, 4-celled with 6–10 ovules per cell; style slender, 6.0–7.0 mm long; stigma minutely toothed. Fruiting pedicel erect or reflexed; fruit broadly ellipsoid, 7–12 mm long, 5–7 mm diameter, rugose, glabrous, 4-valvate; base and apex rounded; valves without transverse septa adaxially. Seeds numerous, \pm rhomboid-cylindric or discoid, 2.0–3.0 mm long, matt dark brown to black. **Fig. 4 I.**

Selected specimens: Queensland. NORTH KENNEDY DISTRICT: Cape Cleveland N.P., Feb 1992, *Forster* PIF9656 & *Bean* (BRI, MEL, QRS); Mount Abbot, 50 km W of Bowen, May 1992, *Bean* 4496 (BRI). PORT CURTIS DISTRICT: 1 km E of Fitzroy Caves N.P., Gomersalls Block, Jun 1989, *Forster* PIF5096 & *Tucker* (BRI); Mt Larcom, 5 km NW of Yarwun, 25 Jan 1994, *Forster* PIF14643 (BRI,

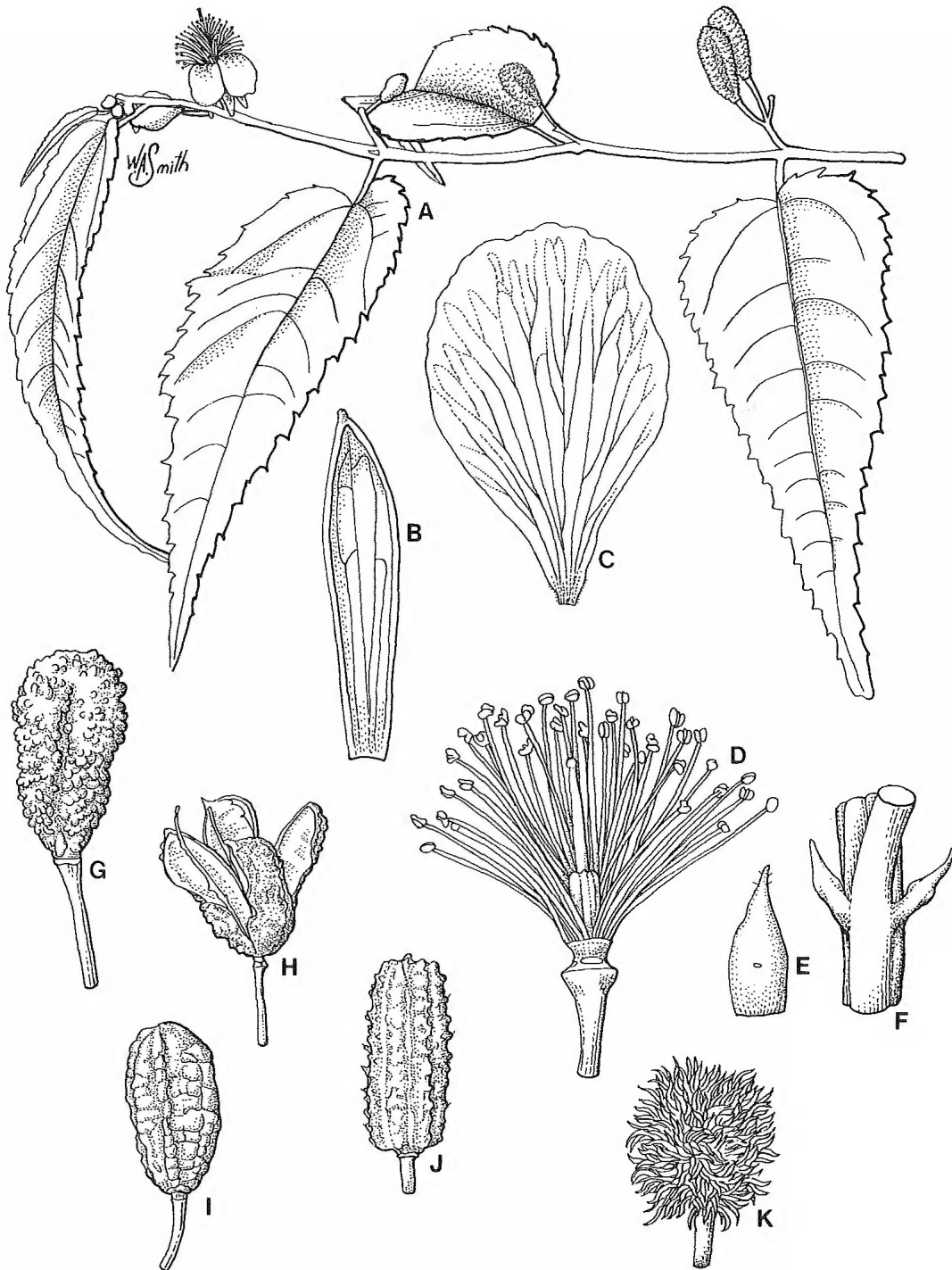


Fig.4. A–H. *C. reynoldsiae*: A. branchlet with flower and fruit $\times 0.6$. B. sepal $\times 4$. C. petal $\times 4$. D. androgynophore with stamens and ovary $\times 4$. E. abaxial view of stipule $\times 8$. F. portion of branchlet with stipules and petiole base $\times 4$. G. fruit $\times 2$. H. fruit dehiscent $\times 2$. I. *C. hygrophilus*: fruit $\times 2$. J. *C. pascuorum*: fruit $\times 1$. K. *C. macropetalus*: fruit $\times 1$. A–H, Halford Q2071; I, Forster & Tucker PIF5096; J, Everist 3001; K, Mitchell 2627. (All BRI).

MEL). BURNETT DISTRICT: Eidsvold, undated, *Bancroft* [AQ 86672] (BRI).

Distribution and habitat: *C. hygrophilus* is endemic to Australia. It occurs sporadically in the coastal and subcoastal areas along the east coast of Queensland from Townsville south to near Eidsvold (**Map 6**). It grows on vine forest margins or in sclerophyll forests near vine forests, on soils derived from granite or limestone.

Phenology: Flowers recorded in January, February and May; fruits recorded in February, May, June and August.

Notes: *C. hygrophilus* is closely related to *C. reynoldsiae*, *C. thozetii* and *C. cunninghamii* but differs from them in its small broadly ellipsoid fruit with a rugose surface.

11. *Corchorus reynoldsiae* Halford sp. nov.

valde affinis *C. hygrophilo* sed sepalis majoribus (10.0–12.0 mm longis et 3.5–4.0 mm latis contra sepala 7.0–9.0 mm longa et 2.0–3.0 mm lata) capsulis obovoideis vel late obovoideis non late ellipsoideis et verrucosis non rugosis distinguitur.

Typus: Queensland. LEICHHARDT DISTRICT: Carnarvon Gorge N.P., 700 m along main track from Information Centre, 25°03'S, 148°13'E, 19 March 1994, *D. Halford & C. Hohnen* Q2071 (holo: BRI; iso: CANB, DNA, K, MEL).

Corchorus sp. (Moolyamba C.T. White 11313), Halford (1994).

Ascending subshrub to 70 cm high; branchlets terete, glabrous or with a scattered covering of minute reddish simple glandular hairs sometimes present on new shoots. Leaves narrowly ovate, 6.0–12.0 cm long, 1.5–4.0 cm wide, glabrous above and below except for scattered minute reddish glandular hairs on lower surface of young leaves; base rounded; apex attenuate; margin serrate; petiole 10–20 mm long, glabrous apart from a line of short curly simple hairs on the adaxial surface. Stipules narrowly ovate, turgid proximally, 2–3 mm long, glabrous, with a single nectariferous pore on abaxial surface; apex attenuate. Inflorescences leaf-opposed, solitary at nodes, 5- to 7-flowered; peduncles 3–10 mm long; pedicels 4–10

mm long; bracts narrowly ovate, 1.0–2.0 mm long. Buds pyriform, 3.0–4.0 mm diameter. Sepals 4, narrowly obovate, 10.0–12.0 mm long, 3.5–4.0 mm wide, glabrous; apex acute. Petals 4, obovate to broadly obovate, c. 10.0 mm long, c. 8.0 mm wide; claw c. 0.8 mm long, minutely ciliate on margin. Androgynophore c. 0.5 mm long; annulus c. 0.3 mm long. Stamens 80–100; filaments 5.0–6.0 mm long. Ovary tetragonous-cylindrical, c. 3.0 mm long, c. 0.5 mm diameter, verrucose, 4-celled with 20 ovules per cell; style slender, 8.0–9.0 mm long; stigma minutely toothed. Fruiting pedicel ascending to erect; fruit obovoid to broadly obovoid, 12–15 mm long, 8–9 mm diameter, longitudinally 4-sulcate, verrucose, glabrous, 4-valvate; apex rounded to truncate; valves without transverse septa adaxially. Seeds numerous, ± obovoid or rhomboid-cylindric, 2.0–3.0 mm long, matt brown to black. **Fig. 4 A–H.**

Additional specimens examined: Queensland. LEICHHARDT DISTRICT: Carnarvon Creek Gorge, 70 miles [113 km] NW of Injune, May 1962, *Johnson* 2414 (BRI); Carnarvon Creek, Sep 1940, *White* 11319 (BRI); Moolyamba Gorge, Sep 1940, *White* 11313 (BRI); Injune-Rolleston road, 86 km N of Injune, Mar 1994, *Halford & Hohnen* Q2159 (BRI).

Distribution and habitat: *C. reynoldsiae* is endemic to Australia. It is confined to the Carnarvon Range area of the central highlands, Queensland from Carnarvon Gorge south to Moolyamba Gorge and east to the Injune - Rolleston road (**Map 6**). It occurs on sandy soils in eucalypt forests along creeks and on the lower parts of talus slopes.

Phenology: Flowers recorded in March; fruits recorded in September, March and May

Notes: *C. reynoldsiae* is closely related to *C. hygrophilus* but can be distinguished by its larger sepals (10.0–12.0 mm long compared with 7–9 mm long) and obovoid to broadly obovoid fruits with a verrucose surface compared with broadly ellipsoid fruits with a rugose surface.

Conservation status: Although *C. reynoldsiae* has a restricted distribution it is not considered endangered. It appears to be an opportunistic species that colonises disturbed soil. A conservation code of 2RC is thus appropriate.

Etymology: This species is named in honour of Ms Sally Reynolds, Principal Botanist at the Queensland Herbarium, who recognised this as a distinct taxon many years ago.

12. *Corchorus macropetalus* (F. Muell.) Domin, *Biblioth. Bot.* 89: 379 (1927 '1926'); *Triumfetta macropetala* F. Muell., *Fragm.* 3: 8 (1862). *Corchorus echinatus* Benth., *Fl. Austral.* 1: 276 (1863), nom. illeg. **Type:** Sturt's Creek, Feb 1856, F. Mueller [MEL 223673] (lecto, here designated: MEL; isolecto: K n.v., photo at BRI).

Erect subligneous herb to 60 cm high; branchlets terete, glabrous except for minute hairs on young shoots. Leaves narrowly elliptic-ovate to elliptic-ovate, 3.0–10.0 cm long, 1.0–3.5 cm wide, glabrous; base rounded; apex obtuse; margin serrate, sometimes with basal teeth prolonged into setaceous points, up to 3 mm long; petiole 7–25 mm long, glabrous except for a line of short reflexed simple hairs on the adaxial surface. Stipules broadly ovate, turgid proximally, 4–7 mm long, glabrous, with two transverse nectariferous grooves on abaxial surface; apex subulate. Inflorescences leaf-opposed, solitary at nodes, 2- or 3-flowered; peduncles 2–7 mm long; pedicels 6–10 mm long; bracts linear-subulate, 4.0–6.0 mm long; Buds spheroidal, 7.0–9.0 mm diameter. Sepals 5, linear-obovate, 10.0–12.0 mm long, 3.0–4.0 mm wide, glabrous; apex acute. Petals 5, obovate to broadly obovate, 10.0–12.0 mm long, 7.0–9.0 mm wide; claw c. 1.0 mm long, minutely ciliate on margin. Androgynophore 0.3–0.5 mm long; annulus c. 0.2 mm long. Stamens 130–170; filaments 5.0–7.0 mm long. Ovary globose, 1.0–2.0 mm diameter, setose, 3- to 7-celled with 8–12 ovules per cell; style slender, 6.0–7.0 mm long; stigma minutely toothed. Fruiting pedicel erect; fruit ovoid-globose, 10–17 mm long, 10–15 mm diameter, covered with fleshy appendages, 3- to 5-valvate, base and apex rounded to truncate; appendages attenuate, 2–4 mm long, terminated by a single erect setaceous hair; valves without transverse septa adaxially. Seeds numerous, ovoid, 4.0–5.0 mm long, black. **Fig. 4 K.**

Additional specimens examined: Western Australia. GARDNER DISTRICT: deserted seeds block on Weaber Plains road 14 km N of Kununurra, July 1992, Mitchell 2856

(BRI, PERTH); Kimberley Research Station, Kununurra, Mar 1963, Lazarides 6745 (CANB); vicinity of Kimberley Research Station near Kununurra, Olivera Farm, 1969, Mackenzie 690429–1 (CANB); cotton fields, Kununurra, May 1967, Scrymgeour 1726 (PERTH); Behn River at Argyle Station homestead, May 1944, Gardner 7228 (PERTH). Northern Territory. VICTORIA RIVER REGION: 1 mile [1.6 km] N of Inverway H.S., Mar 1960, Walter [DNA 6687] (DNA); 10 miles [16 km] NNE of Wavehill Station, Jul 1959, Lazarides 6276 (CANB, PERTH).

Distribution and habitat: *C. macropetalus* is endemic to Australia. It occurs from Kununurra, in the east Kimberley, Western Australia, to the Victoria River region, Northern Territory (**Map 6**). It grows in dark cracking clay soils in mixed grasslands or rarely on stony sandstone soils. It is also recorded in areas under cultivation and along irrigation channels.

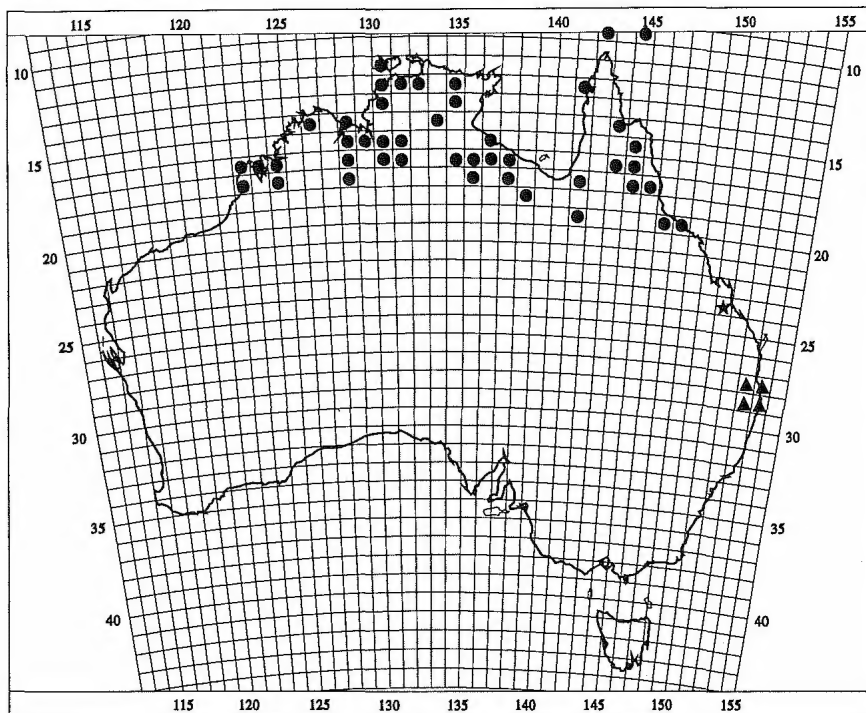
Phenology: Flowers and fruits recorded in March, May and July

Notes: *C. macropetalus* is closely related to *C. pascuorum* but is easily distinguished from that by its 3- to 5-valved ovoid-globose fruit covered with fleshy appendages which are 2–4 mm long and terminated by a single setaceous hair. *C. pascuorum* has 6- to 9-valved, obloid-cylindrical fruit with a verrucose surface.

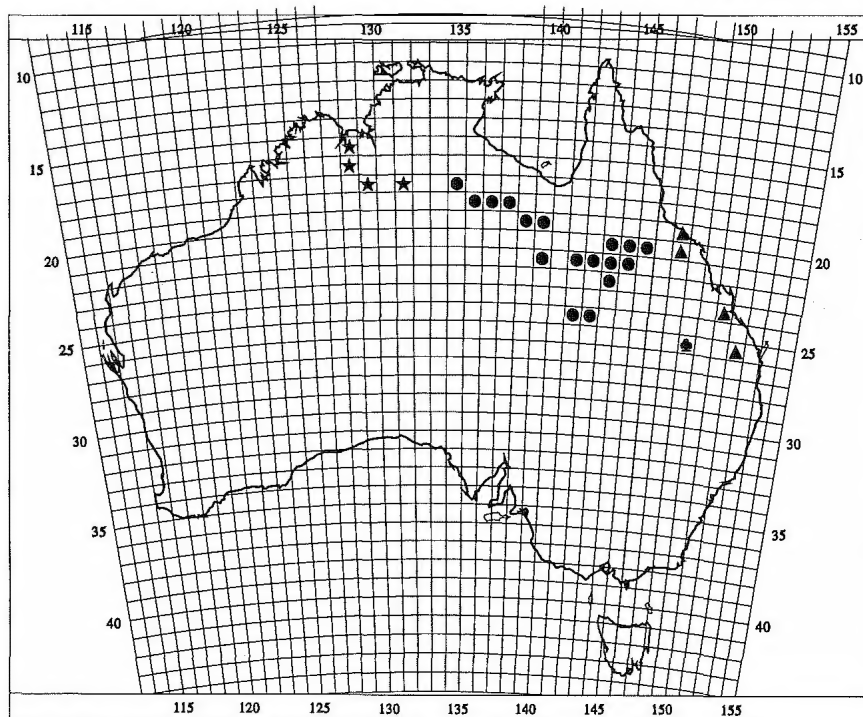
Typification: Of the two sheets of original material available (MEL 223674 & MEL 223673), MEL 223673 is here chosen as lectotype because it has both flowers and fruits attached and agrees with the protologue.

13. *Corchorus pascuorum* Domin, *Biblioth. Bot.* 89: 379 (1927 '1926'). **Type:** Queensland. BURKE DISTRICT: between Hughenden and Cloncurry, Feb 1910, K. Domin [PR 6474] (lecto, here designated: PR; isolecto: PR [PR 6473]).

Erect subligneous herb to 60 cm high; branchlets terete, glabrous or sparsely covered with minute, simple hairs. Leaves narrowly oblong-obovate or narrowly ovate, 4.0–12.0 cm long, 1.0–4.0 cm wide, glabrous; base rounded to truncate or slightly cordate; apex acute; margin serrate, sometimes with a pair of basal teeth prolonged into setaceous points, up to 2 mm long; petiole 10–20 mm long, glabrous apart from a line of short curved simple hairs on adaxial surface. Stipules ovate, turgid proximally, 3–4 mm long,



Map 5. Distribution of *Corchorus* spp. *C. aestuans* ●, *C. thozetii* ★, *C. cunninghamii* ▲.



Map 6. Distribution of *Corchorus* spp. *C. macropetalus* ★, *C. pascuorum* ●, *C. hygrophilus* ▲, *C. reynoldsiae* ◆.

glabrous, with two nectariferous pits on abaxial surface; apex subulate. Inflorescences leaf-opposed, solitary at nodes, 1- to 5-flowered; peduncles 2–3 mm long; pedicels 10–15 mm long; bracts narrowly ovate, 3.0–5.0 mm long. Buds spheroidal, 7.0–10.0 mm diameter. Sepals 5, obovate, 9.0–12.0 mm long, 3.0–4.0 mm wide, glabrous; apex acute. Petals 5, broadly obovate, 12.0–13.0 mm long, 8.0–10.0 mm wide; claw c. 1.0 mm long, ciliate on margin. Androgynophore obsolete or nearly so; annulus very short, margin undulate. Stamens 80–110; filaments 3.0–7.0 mm long. Ovary subglobose, 1.5–2.0 mm diameter, setose, 6- to 9-celled with 6–8 ovules per cell; style slender, 5.0–8.0 mm long; stigma fimbriate. Fruiting pedicel erect; fruit obloid-cylindrical, 13–25 mm long, 8–10 mm diameter, verrucose, glabrous, 6- to 9-valvate, truncate at base; apex truncate with short blunt point; valves without transverse septa adaxially. Seeds numerous, \pm rhomboid-cylindric, c. 4.0 mm long, rugose, dull black. **Fig. 4 J.** Chromosome number $2n = 28$ (Roy 1962).

Selected specimens: Northern Territory. BARKLY TABLELANDS REGION: 25 miles [40 km] SE [of] Elliott, date not recorded, *Byrnes* 2042 (DNA); 55.4 miles [89.1 km], Eva Downs-Helen Springs, Jun 1947, *Perry* 95 (CANB); SW of Burnette Downs, dry bed of Lake Sylvester, May 1947, *Blake* 17835 (BRI); 3 miles [4.8 km] W [of] Crows Nest bore, Burnette Downs, Mar 1956, *Chippendale* 1953 (BRI, CANB, DNA, MEL); Alexandria Station, 15 km NW of Homestead, Mar 1981, *Henshall* 3521 (DNA). **Queensland.** BURKE DISTRICT: Flinders River, Aug 1916, *White* [AQ 86749] (BRI); Essex Downs, Jun 1936, *Blake* 11671 (BRI); 60 miles [97 km] NW of Maxwellton, on "Sutherland" property, Mar 1964, *Entwistle* 6 (BRI); "Sutherland", 45 miles [72 km] NW of Maxwellton, Jan 1966, *Pedley* 1937 (BRI); 38 miles [c. 61 km] W of Hughenden, Jun 1947, *Everist* 3001 (BRI); Toorak, Jun 1958, *Sillar* [AQ 86745] (BRI); about half way between McKinlay and Kynuna, Feb 1937, *Everist & Smith* 226 (BRI); Gilliat River, Burke and Wills Roadhouse-Julia Creek Road, Jul 1990, *Williams* 90033 (BRI). GREGORY NORTH DISTRICT: Wyora Station, 80 km N of Winton, Feb 1986, *O'Sullivan* 6 (BRI); Dagworth, near Kynuna, Jun 1958, *Skerman* [AQ 86742] (BRI); 30 km NW of Winton, Mar 1988, *Cheffins* 337 (BRI); Elderslie, W of Winton, Nov 1935, *Blake* 10020 (BRI, CANB); 20 km SW of Davenport Station, May 1977, *Schmid* AS374 (BRI).

Distribution and habitat: *C. pascuorum* is endemic to Australia. It occurs from Newcastle Waters, Northern Territory across the Barkly Tablelands to Hughenden, Queensland in the

east, and south to Monkira Station on the Diamantina River floodplains, Queensland (**Map 6**). It grows on dark cracking clay soils in grasslands or herblands.

Phenology: Flowers recorded from February to August; fruits from January to August and November.

Notes: *C. pascuorum* is most closely related to *C. macropetalus*. The distinguishing features of these two species are discussed under *C. macropetalus*.

Typification: At Prague there are two sheets of original Domin material (PR 6474 & PR 6473). Important and easily recognisable diagnostic characters are found in the fruit of *Corchorus*. For this reason the material on sheet PR 6474 is selected here as the lectotype because it has mature fruit and agrees with the original description.

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